

Precautions

1. Place the Automatic Voltage Stabilizer (AVR) in a dry area. Keep it away from corrosive chemicals, flammable gases, conductive dust, steam and out of reach by the children.
2. The Grounding Terminal wire and Neutral Terminal wire should be properly connected to ensure safety. Improper connection can cause short circuit and may damage the unit.
3. During normal operation, the AVRs will produce heat. Please ensure proper ventilation by not blocking the vents on the unit.
4. It is normal to hear friction sounds when fluctuation of voltage occurs. At this point, the AVR is regulating the voltage.
5. Do not open the unit when it is connected to the power source (Live outlet).
6. When the unit has been used for a long period of time, the unit should have regular maintenance by cleaning the inside portion, especially between the carbon and the coil by a qualified electrical technician for efficient operation. If the carbon brush is already worn out, replace it immediately so that it will not cause serious or further damage to the unit.
7. Do not continue to use the unit if it is not working properly, instead bring it to an authorized service center or qualified electrical technician.
8. If there are parts that were replaced or the unit was opened/repared not by an authorized service representative, we will not be liable to any quality and safety problems.
9. Tampering with the AVR unit voids the warranty. This includes repairs, replacement of parts or modifications done to the unit by unauthorized service centers. The company will not be held liable for any damages arising from the product due to its misuse or abuse.

Instruction Manual

AUTOMATIC VOLTAGE STABILIZER

Before operating this product, please read this manual first and preserve it well.

Automatic Voltage Stabilizer

Introduction

The voltage stabilizers are designed according to international design principles. It is noted for its visible advantages, such as elegant appearance, compact design, lightweight, high efficiency, no distortion of output waveform, complete protection functions and etc.

All the voltage stabilizers have passed strict quality inspections to maintain top and best quality electronic elements.

The voltage stabilizers are suitable for the areas where voltage fluctuates frequently in power grid.

The voltage stabilizers are widely applied and suitable to use for industrial companies, schools, medical and scientific research laboratories, communication central offices and household appliances with high power load.

Technical Characteristics

1. Output capability

When main voltage is lower than 198V, the output capacity of this equipment reduces correspondingly; the relationship between output capability and input voltage is shown as diagram 1

2. Overload capability

When input voltage of this equipment changes from 198V to 270V, its overload capability is shown as table 1 under emergency service

(P---Output capability; P_c---Rated output capability; U---Input voltage)

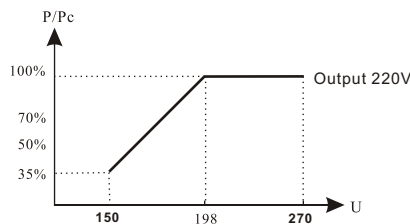


Diagram 1

Overload ratio	Overload time not permitted(min.)
20%	60
40%	30
60%	5

Table 1

Automatic Voltage Stabilizer

3. LCD/LED DISPLAY;

Modern appearance by equipping with LCD/LED display meters.

4. Provide BYPASS function:

All of the Models are produced with BYPASS function.

5. Overload or short-circuit protection: Single Phase 1.5KVA and below models offer fuse to protect against overload or short circuit; and other specification models use circuit-breaker.

6. Technical Specifications

ITEM	SINGLE PHASE	THREE PHASE
MODELS	500VA; 1000VA; 1500VA; 2000VA; 2500VA; 3000VA; 5KVA; 7.5KVA; 10KVA; 15KVA; 20KVA; 30KVA; 45KVA	1.5KVA; 3KVA; 4.5KVA; 6KVA; 9KVA; 15KVA; 20KVA; 30KVA; 45KVA; 50KVA; 60KVA; 80KVA; 90KVA
Input Voltage Range	Single phase three-wire system 150~270V	Three phase five-wire system Phase voltage: 150~270V Line voltage: 260~465V
Output Voltage	Single phase three-wire system 220V	Three phase five-wire system Phase voltage: 220V Line voltage: 380V
Over-voltage protection value	Output 246+/-4V	Phase voltage: 246+/-4V (Phase voltage as reference)
Under-voltage protection value	Output 184+/-4V	Phase voltage: 184+/-4V (Phase voltage as reference)
Volt.stabilizing Accuracy	+/-3%	
Frequency	50~60Hz	
Waveform distortion	No additional waveform distortion	
Load power factor	0.8	
Efficiency	>90%	
Adjustable time	<1s when input voltage has a change of 10%	
Delay time	Long time delay: 5+/-2min; Short time delay: 5+/-2s	
Electric strength	No flashover or breakdown when it withstands 1500V/min.	
Insulation resistance	2MΩ	

7. Applicable working conditions

Environment temperature: $-5\sim 40^{\circ}\text{C}$

Relative humidity: less than 95%

Air pressure: $86\sim 106\text{kPa}$

Working environment: no chemical deposition, scales, harmful corrosive medium as well as flammable or explosive gas. Besides, the altitude is not higher than 1,000m.

Working Principle

1. Circuit diagram (see diagram 2~diagram 6)

2. Sampling control principle (see diagram 7)

(Note: following diagrams are only for reference, if they are changed partially for improving product, we will not notice separately)

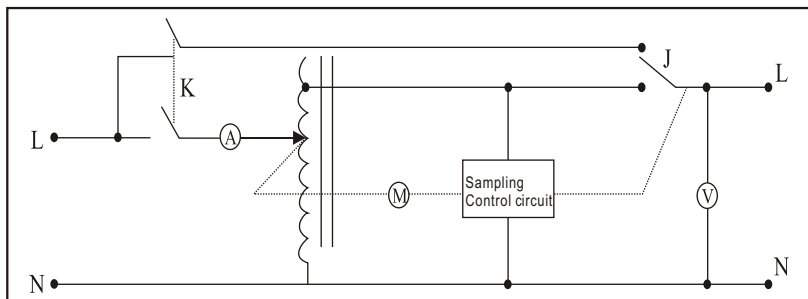


Diagram 2: Circuit diagram of SVC series single phase 0.5KVA~10KVA models

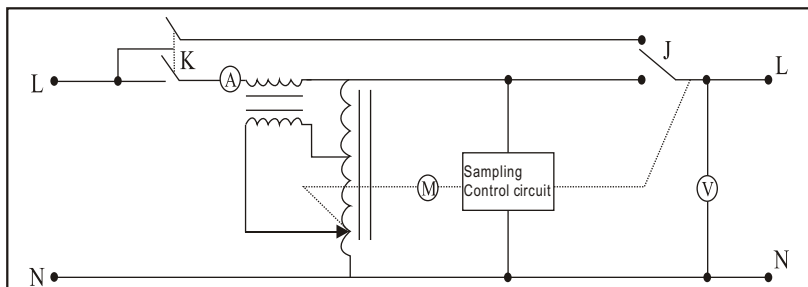


Diagram 3: Circuit diagram of SVC series single phase 10KVA and above models

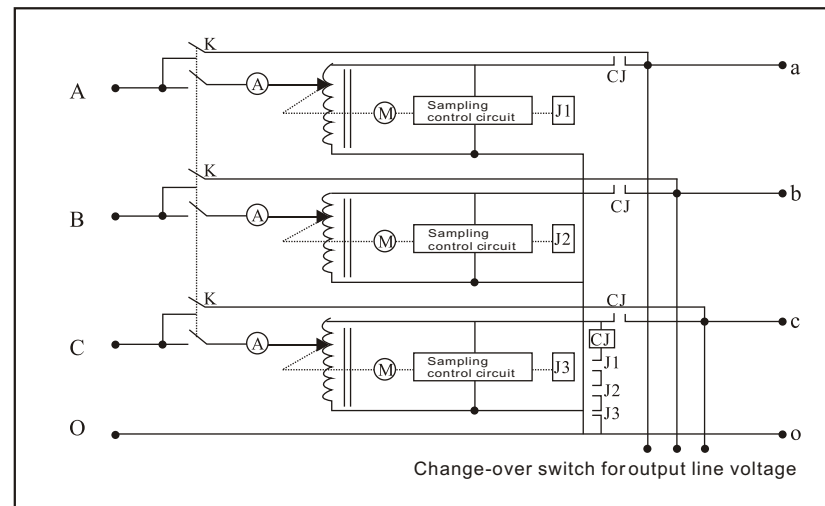


Diagram 4: Circuit diagram of SVC series three phase 1.5KVA~30KVA models

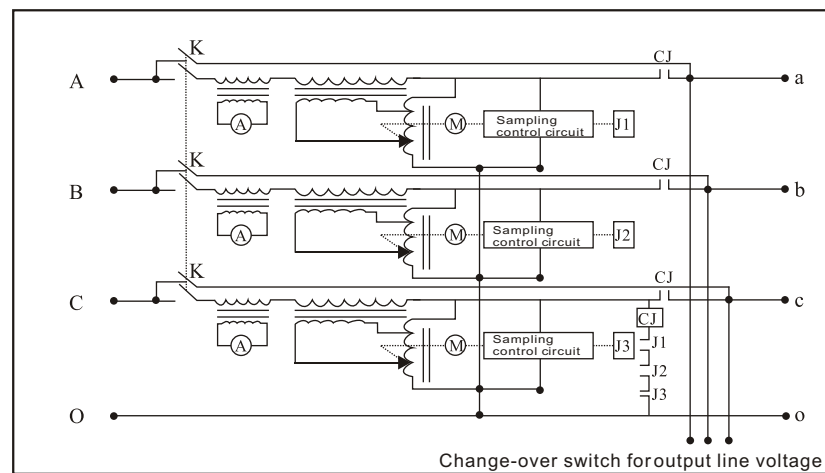


Diagram 5: Circuit diagram of SVC series three phase 15KVA and above models

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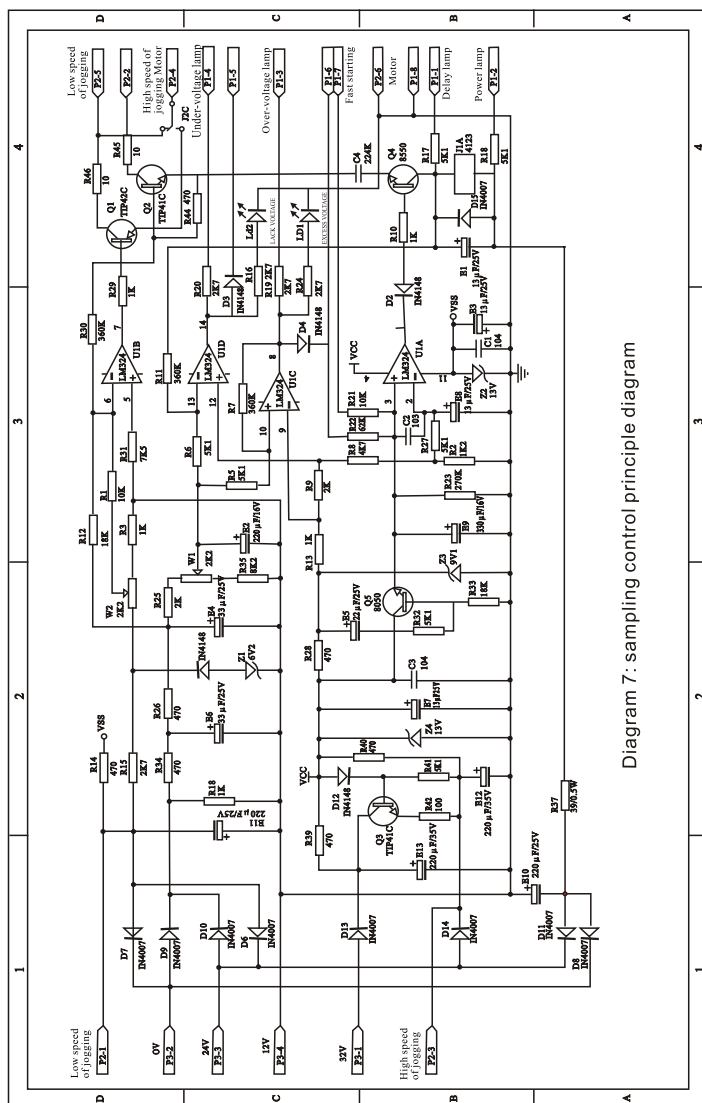


Diagram 7: sampling control principle diagram

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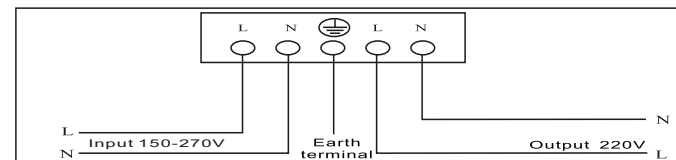


Diagram 8: Wiring diagram of three phase 5KVA and above models

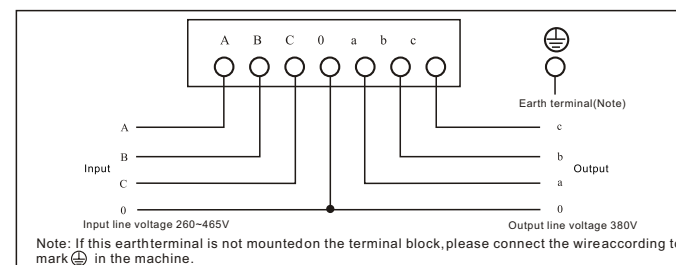


Diagram 9: Wiring diagram of three phase 1.5KVA and above models

Operating instruction

1. Read the instruction manual carefully before using the unit.
2. Before operating AVR units with capacity of 2000watts and above, connect the wires according to the symbol in front and back panel of the unit. Make sure the wires are properly connected to the terminal. Make sure the power source is within the range of the input voltage of the unit. For higher wattages capacity you may refer to the diagram 9 for the correct wiring diagram.
For the AVR units with capacity of 1500watts and below, power cords and plugs are already provided.
(Please follow labeled voltage for output terminals for proper usage).
3. AVR unit should be placed in a dry and well ventilated area before using.
When the AVR unit is switched on, it will automatically regulate the input voltage.
If the meter on the unit shows 220V(380V for the three phase AVR), the unit is ready and appliances plugged into the AVR may now be used.
4. Total load(watts) should not exceed the rated capacity of the AVR unit to avoid overloading.
5. For appliances with inductive load(such as air conditioner, refrigerator, industrial fans etc.), It is recommended to use an AVR that has a rated power capacity of 3~5 times of the load power, because the start up current of these appliances are very high.
For capacitive load, just leave enough allowance on the rated power capacity of the unit and avoid overloading.
6. You can check your appliances for the rated power consumption to avoid overloading the AVR unit.
7. Make sure that the appliances are switched OFF before turning ON the AVR unit.
8. When power failure occurs or the input voltage is too high, turn OFF the AVR immediately.